PART 2E

Chancroid

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Sex Transm Infect 2006;**82**(Suppl IV):iv19–iv20. doi: 10.1136/sti.2006.023127

Chancroid, caused by infection with *Haemophilus ducreyi*, is characterised by ano-genital ulceration and lymphadenitis with progression to bubo formation. The incubation period for this disease is short, around 3–10 days, and the initial lesion is a papule that may progress to form an ulcer through an intermediate pustular stage. It is a disease of resource poor settings and may be considered as a tropical sexually transmitted infection (STI). It is rare in the United Kingdom and the disease is almost always acquired overseas.

Testing, wherever possible, is recommended in all cases of ano-genital ulceration acquired overseas in areas of the world where chancroid is prevalent including Africa, Asia, Latin America, parts of the United States, and the Caribbean. The importance of asymptomatic carriage of *H ducreyi* is unclear and appropriate studies have yet to be performed.[1 2]

RECOMMENDED TESTS

Isolation of causative agent, *H ducreyi*

Material obtained from the undermined edge of the ano-genital ulcer, after removing superficial pus with a cotton tipped swab, is plated directly onto culture medium and incubated at 33℃, in high humidity with 5% carbon dioxide for a minimum of 48–72 hours. Transport media have been described but they have not been widely evaluated and in one study have shown little advantage over direct plating.[3] Pus aspirate from inguinal buboes can also be cultured in the same way but the yield is lower than with ulcer derived material.

Different strains of *H ducreyi* appear to grow preferentially on some culture media and so the use of more than one type of culture medium (described below) is recommended to give the greatest number of positives (sensitivity varies between 33% in low prevalence populations to 80%, in high prevalence populations,[4] evidence level IIa, recommendation grade B). Addition of a selective agent, 3 mg/l vancomycin, is recommended[5] (evidence level III, recommendation grade B).

Culture media include:

- GC agar supplemented with 1% haemoglobin, 5% fetal calf serum, 1% IsoVitaleX, and 3 mg/l vancomycin[6]
- Mueller-Hinton agar supplemented with 5% chocolatised horse blood, 1% IsoVitaleX, and 3 mg/l vancomycin[6]
- GC agar supplemented with 1% haemoglobin, 0.2% activated charcoal, 1% IsoVitaleX, and 3 mg/l vancomycin.[7]

Direct detection of *H ducreyi* by nucleic acid amplification

There are no commercial tests available but there are a number of laboratories that have described in house tests, some of which also amplify *Treponema pallidum* and herpes simplex virus (HSV).[8 9] Molecular detection for *H ducreyi* is available via local laboratories sending specimens to the Sexually Transmitted Bacteria Reference Laboratory (STBRL) at the Health Protection Agency (stbrl@hpa.org.uk) (evidence level IIb, recommendation grade B).

Microscopy

Detection of sheets of Gram negative coccobacilli has a low sensitivity and is not recommended as a diagnostic test[9] (evidence level IV, recommendation grade C).

Serology

The detection of antibody to *H ducreyi* as a marker of chancroid has been useful for epidemiological studies but has no role in direct patient management[10 11] (evidence level III, recommendation grade B).

RECOMMENDED SITES FOR TESTING

- Ano-genital ulcer material
- Bubo pus.

FACTORS THAT ALTER TESTS RECOMMENDED OR SITES TESTED

Recent travel by an index patient with genital ulceration (or his/her sexual partner) to a part of the world where chancroid is endemic suggests that *H ducreyi* infection should be considered as a cause of genital ulceration.

The presence of a bubo may require pus to be aspirated in addition to a sample of the ulcer material being taken. The inability of the local laboratory to offer a diagnostic facility for *H ducreyi* infection may make it impossible for the clinician to undertake a diagnostic test for chancroid. Because of the infrequency of requests the laboratory diagnosis for chancroid is often unavailable. In low prevalence populations, such as the United Kingdom, culture media are often produced in response to a typical clinical presentation, which has made it very difficult to maintain good quality control. There is no quality assurance programme for culture for *H ducreyi* in the United Kingdom.

Risk groups

- Men who have sex with men (no alteration to standard recommendation)
- Sex workers (no alteration to standard recommendation).

Other groups

- ''Young'' patients (no alteration to standard recommendation)
- Pregnant women (no alteration to standard recommendation)
- Women with a history of hysterectomy (no alteration to standard recommendation).

Abbreviations: HSV, herpes simplex virus; STBRL, Sexually Transmitted Bacteria Reference Laboratory; STI, sexually transmitted infections

RECOMMENDATION FOR FREQUENCY OF REPEAT TESTING IN AN ASYMPTOMATIC PATIENT

Testing should only be performed in the presence of an ano-genital ulcer or a bubo in an individual at risk of acquiring chancroid.

Screening asymptomatic patients is not recommended.

RECOMMENDATION FOR TEST OF CURE

A test of cure for chancroid is not recommended.

If ulceration persists after therapy for chancroid, patients should have a repeat chancroid culture performed to determine if a strain of *H ducreyi* resistant to the prescribed antimicrobial is present.

RIGOUR OF DEVELOPMENT

This guideline was obtained by searching the Medline database from 1980 up until November 2002 using the MeSH headings ''chancroid, *Haemophilus ducreyi*, diagnosis''.

The UK National Guidelines for the management of chancroid.[12]

CDC STI guidelines of 2002 were used as a source for expert consensus.[13]

European guideline for the management of tropical genito-ulcerative diseases.[14]

Key review papers have been referenced.[15 16]

APPLICABILITY

This guidelines recommends the use of culture media and nucleic acid amplification technologies to diagnose *H ducreyi* infection. However, these tests may not be routinely available in many laboratories.

Staff in GUM clinics should liase closely with their laboratory staff to ensure that every effort is made to diagnose chancroid effectively.

AUDITABLE OUTCOME MEASURES

H ducreyi should be isolated from genital ulcer swabs in 40% of clinically diagnosed chancroid cases.

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Conflict of interest: none.

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Accepted for publication 31 August 2006

REFERENCES

1 **Hawkes S**, West B, Whittle H, *et al*. Asymptomatic carriage of H ducreyi confirmed by polymerase chain reaction. *Genitourin Med* 1995;**71**:224–7.
2 **Lewis DA**. Chancroid: from clinical practice to basic science. *AIDS Patient Care STDs* 2000;**14**:19–36.
3 **Dangor Y**, Radebe F, Ballard RC. Transport media for Haemophilus ducreyi. *Sex Transm Dis* 1993;**20**:5–9.
4 **Trees DL**, Morse SA. Chancroid and Haemophilus ducreyi: an update. *Clin Microbiol Rev* 1995;**8**:357–75.
5 **Hammond GW**, Lian C-J, Wilt JC, *et al*. Comparison of specimen collection and laboratory techniques for isolation of Haemophilus ducreyi. *J Clin Microbiol* 1978;**7**:39–43.
6 **Dangor Y**, Miller D, Koornhof HJ, *et al*. A simple medium for the primary isolation of Haemophilus ducreyi. *Eur J Clin Microbiol Infect Dis* 1992;**11**:930–4.
7 **Lockett AE**, Dance DAB, Mabey DCW, *et al*. Serum-free media for isolation of Haemophilus ducreyi. *Lancet* 1991;**338**:326.
8 **Orle KA**, Gates CA, Martin DH, *et al*. Simultaneous PCR detection of Haemophilus ducreyi, Treponema pallidum and herpes simplex virus types 1 and 2 from genital ulcers. *J Clin Microbiol* 1996;**34**:49–54.
9 **Morse SA**, Trees DL, Htun Y, *et al*. Comparison of clinical diagnosis of genital ulcer disease in Lesotho: association with human immunodeficiency virus infection. *J Infect Dis* 1997;**175**:583–9.
10 **Alfa MJ**, Olsen N, Degagne P, *et al*. Humoral response of humans to lipooligosaccharide and outer membrane proteins of Haemophilus ducreyi. *J Infect Dis* 1993;**167**:1206–10.
11 **Museyi K**, Van Dyck E, Vervoort T, *et al*. Use of an enzyme immunosorbant assay to detect serum IgG antibodies to Haemophilus ducreyi. *J Infect Dis* 1988;**157**:1039–43.
12 **Mayaud P**. National guideline for the management of chancroid. *Sex Transm Infect* 1999;**75**(Suppl 1):S43–5.
13 **Center for Disease Control and Prevention**. *Sexually transmitted diseases treatment guidelines 2002*, www.cdc.gov/mmwr/PDF/rr/rr5106.pdf.
14 **Roest RW**, van der Meijden WI. European guideline for the management of tropical genito-ulcerative diseases. *Int J STD AIDS* 2001;**12**(Suppl 3):78–83.
15 **Lewis DA**. Diagnostic tests for chancroid. *Sex Transm Infect* 2000;**76**:137–41.
16 **Albritton WL**. Biology of Haemophilus ducreyi. *Microbiol Rev* 1989;**53**:377–89.